January 6, 2003

To: Supervisor Yvonne Brathwaite Burke, Chair
Supervisor Gloria Molina
Supervisor Zev Yaroslavsky
Supervisor Don Knabe
Supervisor Michael D. Antonovich

From: David E. Janssen
Chief Administrative Officer

SUSTAINABLE DESIGN STANDARDS

On July 30, 2002, on motion of Supervisor Antonovich, the Board of Supervisors directed the Chief Administrative Officer and the Directors of Internal Services and Public Works to investigate the feasibility of incorporating sustainable design standards into the design of all future projects exceeding 7,500 square feet to be built by the County of Los Angeles. This report responds to that Board Order.

A Definition of Sustainable Design

Sustainable, or green, design is an integrated approach to the design and construction of buildings and facilities that seeks to meet the goals of:

- protecting the health of building occupants and improving employee productivity;
- conserving natural resources; and
- yielding long-term cost or operational efficiencies over the life of the building.

These goals are met through techniques including use of water efficient landscaping, "waterless" water-use toilet fixtures, low maintenance finishes and efficient electrical systems, maximization of day-lighting and natural ventilation, use of recycled/recyclable

construction materials and recycling of construction waste.

A Review of County Design and Building Techniques

In reviewing County capital projects to determine whether green building design techniques are already incorporated into their design and construction, the Department of Public Works found that a number are already incorporated, including the use of durable exterior and interior finishes, energy-efficient lighting with occupancy-based controls, water-conserving plumbing fixtures, and other items.

The review found that certain additional techniques, such as the use of highly water-efficient landscaping and irrigation methods, preferred parking provisions for carpools, incorporation of thermal mass into the building structure, provision of electric vehicle charging stations and installation of energy conserving appliances and systems, would either save an equivalent amount over the long-term operation of the building or would be relatively inexpensive to implement; therefore, these techniques could be incorporated into County design and construction specifications without significant increase in overall long-term costs to the County.

However, a number of other available green building techniques, including development on environmentally damaged "brownfield" sites, use of certain recycled/recyclable building materials, and onsite renewable energy generation, although supportive of environmental sustainability, appear to add significant costs, both in design/construction and over the building's life cycle. Incorporation of such techniques into County design and construction would require a significant financial and policy commitment in capital projects funding.

A Review of Various Sustainable Design Standards

Our review of sustainable design standards and techniques considered the green building policies of several cities and other governmental jurisdictions, as well as general information available in the building industry. From several sources it is clear that the green building process requires a commitment on the part of leadership to fund multi-disciplinary collaboration on projects, from development of standards, through design and construction, to the long-term operation of each building.

Some cities' green building standards, such as those of Los Angeles, San Jose, and Seattle, focus on their own municipal buildings, while cities like Portland and Santa Monica also address local private developments. While some cities have developed

their own set of sustainable design policies (e.g., Santa Monica), several of these jurisdictions, including the City of Los Angeles, tie their policies to the "Leadership in Energy and Environmental Design" (LEED) rating system, developed by the United States Green Building Council (USGBC), a nationwide building-industry trade organization formed to advance green building practices.

The LEED rating system represents the USGBC's effort to provide a highly progressive national standard for the environmental, health and economic performance of buildings, using advanced, trend-setting principles, practices and materials. The system is based on a structure whereby seven sustainable techniques would be required and another 69 techniques would generate credits–at least 26 credits (as well as all of the prerequisites) are required for a building to be "LEED-certified." Categories for these prerequisites and credits are: sustainable sites; water efficiency; energy and atmosphere; materials and resources; indoor environmental quality; and innovation and design. Because the LEED standards are so progressive and require a concerted effort to accomplish, it was little surprise that few of the criteria have been fully achieved in recent County projects.

The City of Los Angeles, in particular, began considering sustainable building concepts between six and seven years ago. Starting in 1999, they hired an employee dedicated to this task. After review of many different sustainable building programs, the City chose to adopt the LEED rating system. Although their policy, adopted in July 2002, is intended to apply to all buildings constructed by the City beginning in July 2003, it is anticipated that only 80 to 90 percent of new projects will meet the LEED standards by 2005-06. It is expected that sustainable buildings can be built for all projects within ten years, with an up-front cost increase anticipated to be at least 7 percent.

Conclusions and Recommendations

Staff from each of the three departments met several times to discuss the feasibility of incorporating the LEED design standards into County capital projects. While it was generally agreed that most of the LEED prerequisites and credits are worthy objectives, there would be significant cost implications to implement them. Furthermore, several green building techniques are not yet tested by years of operation, and may require innovative or non-routine maintenance and monitoring procedures to maintain their value, which would complicate the County's ability to reap the benefits of these techniques. Based on the City of Los Angeles estimates of additional cost, it is not unreasonable to anticipate that meeting LEED-certification criteria would add at least 7 percent, but possibly 15 percent or more per project, as compared with current County building practices. Therefore, we recommend:

$ First, due to severe budgetary constraints facing the Board of Supervisors at this time, the County should not attempt to meet the LEED criteria as part of the routine development of capital projects.

$ Second, as part of the routine development of our capital construction program, the CAO and Department of Public Works should continue to give consideration to incorporating sustainable designs and construction methods where feasible for our buildings. Particular emphasis should be given to those techniques that have a positive effect on occupant health and safety and would generate significant savings in overall life cycle costs. Those two departments should also take further steps to collaborate with ISD to evaluate energy usage, maintenance requirements, and other operational cost factors that can be optimized in the design and construction of County capital projects.

$ Third, if a funding commitment equal to 15 percent over and above the estimated cost of a specific capital project is made available by the Board of Supervisors, the County should undertake a pilot project wherein the Department of Public Works would incorporate as many LEED green building techniques as possible, up to the level required for LEED certification within the funding allocation. A report on the success of the project would follow. That report would discuss further education and training needs, actual and expected future project implementation costs, and additional staffing needs to implement and operate future certified projects. The report would provide recommendations as to whether the County should attempt to meet some or all of the criteria in future projects.

Please contact me if you have any questions, or your staff may call Michele Vercoutere of my staff at (213) 893-2476.

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c: Executive Officer, Board of Supervisors
County Counsel
Director of Internal Services
Director of Public Works